REGISTERING AN APPLICATION PROGRAM OF AN INFORMATION DEVICE

Field of the Invention

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This invention relates to a method for and a means of registering a software application program loaded onto a wireless information device. The invention is applicable to, but not limited to, mobile communication or

10 information devices such as PDAs, wireless phones and notebook computers.

Background of the Invention

15 Modern mobile information and communication devices are provided with powerful microprocessors, large displays and many have expandable memory. This makes them capable of a wide range of functions beyond their basic design functions, such as web browsing, video playback, personal

20 data assistant, e-mail organiser, etc. The functionality of the devices is limited only by the software applications available for, and executable on, the microprocessor hardware of the device.

25 The volume of software applications available for a specific device depends largely upon the popularity of the device and thus its attractiveness to the general software development community. It only becomes apparent some time after the launch of a new device that it is a

30 commercial success, at which point many more applications become available for the device. On the other hand, the applications available for the device add to its attractiveness in the market place and ensure its

commercial success. Thus, it is imperative that software applications be as far as possible portable and upgradeable, and that a new or modified software or firmware for a device be downloadable to the device. The

5 applications thus installed may be run on the microprocessor of the device in order to improve the device's performance or increase its functionality.

Tracking and controlling the usage of a particular

10 application or piece of firmware is, however, a serious problem. Existing methods for tracking the use of applications require some form of unwieldy pre-registration on the part of the device user, such as pre-registering the product after purchasing it (via the

15 internet for example). In such a case, the user would have to enter his/her data via a web site after which the user would then receive a registration code, perhaps via e-mail, which would then have to be input into the mobile device to unlock the new application once installed.

20

The problems with such a system are many-fold. The user may, at the point of purchase, enter false data or simply make an error inputting the data. In addition, the inventor of the present invention has recognised and

25 appreciated that the application developer has no idea if the application is being used and on what platform or devices it is being used. Thus, there is no opportunity for the developer to track the use of the application and thereafter optimise its use, say by offering upgrades to

30 users.

Thus, a need exists for a reliable and simplified method of registering, and/or activating an application on a

mobile wireless information device, and a means of carrying out this method, wherein the above-mentioned disadvantages may be alleviated.

5   **Statement of Invention**

In summary, a method and means of registering an application program on a wireless information device, is described whereby the application program includes a
10   self-registration function.

In accordance with a first aspect of the present invention, there is provided a method for registering an application program for a mobile wireless information
15   device. The application program is downloadable to the information device (100) via a communications interface. The method comprises the step of accessing data associated with, and stored on, the wireless information device by the application program. The method further
20   comprises the steps of running a self-registration function; and transmitting registration data wirelessly to a remote registration server to register the application program and activating the application program following transmission of the registration data.
25

This allows the application developer to monitor use of their software, allows the mobile device's user to be informed of modifications and/or updates to the functionality of the device and/or allows automatic
30   optimisation of features of the device.

In accordance with a second aspect of the present invention, there is provided a method for registering and

activation of a Java™ MIDLet application program, as claimed in Claim ~~14~~13.

In accordance with a third aspect of the present invention, there is provided ~~a registration server means, as claimed in Claim 15.~~

~~In accordance with a fourth aspect of the present invention, there is provided a registration server means, as claimed in Claim 17.~~

~~In accordance with a fifth aspect of the present invention, there is provided~~ a wireless information device, as claimed in Claim ~~19~~14.

Further aspects of the present invention are as defined in the dependent Claims.

Brief Description of the Drawings

Exemplary embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

FIG. 1 illustrates a block diagram of a wireless audio communication unit adapted in accordance with the preferred embodiment of the present invention;

FIG. 2 illustrates a schematic of a registration system according to the present invention; and

FIG. 3 illustrates a flow chart of the registration process according to the present invention.

Description of Preferred Embodiments

The preferred embodiment of the present invention will be described in terms of a mobile telephone 100 capable of executing application program software written in the Java™ language and being MIDlet compatible. However, it will be appreciated that the invention may be embodied in any other type of wireless communication device that is capable of executing Java programs or programs written in the native language of the device or any language capable of execution on the hardware of the device, for example a pager, a portable or mobile radio, a wireless-capable laptop computer, etc. It is further envisaged that the inventive concepts may be embodied in a variety of information devices, such as a personal digital assistant (PDA) with wireless ethernet capability (sometimes referred to as WiFi). Thus, in the context of the foregoing text, any reference to an 'information device' encompasses both information devices such as PDAs as well as wireless communication devices.

These devices also often include signal processors or microprocessors that allow functionality to be added to the device via modifications to the device's software or firmware.

The present invention provides a mechanism to allow the functionality of a Java-capable communication device 100, such as a mobile phone, to be changed easily at any point during the lifetime of the device. A further advantage of the present invention is that once the Java-capable communication device 100 is in the hands of the sales

person or the end-user, the sales person or end-user can readily modify the device to suit the end-user's particular requirements/preferences by installing applications that perform the required functions or

5   provide firmware updates or the like. In this regard, the end-user has simplified access to a wide range of device enhancing applications for his/her communication device.

10   Referring first to FIG. 1, there is shown a block diagram of part of a wireless information device 100, adapted to support the inventive concepts of the preferred embodiments of the present invention. The wireless information device 100, in the context of the preferred

15   embodiment of the invention is a mobile phone. As such, the wireless information device 100 contains an antenna 102 preferably coupled to a duplex filter or antenna switch 104 that provides isolation between receive and transmit chains within the wireless information device

20   100. The receiver chain, as known in the art, includes receiver front-end circuitry 106 (effectively providing reception, filtering and intermediate or base-band frequency conversion). The front-end circuit is serially coupled to a signal processing function 108.

25
     In accordance with the preferred embodiment of the present invention, the signal processing function 108 has been adapted to support a Java Virtual Machine (JVM) 109, for interpreting Java bytecode for the purposes of

30   modifying the functionality of the wireless information device 100. In addition, the signal processing function 108 is able to access further firmware and hardware features of the wireless information device 100, as

described in greater detail with reference to FIG. 2 and FIG.3.

As known in the art, the receiver chain also includes

5   received signal strength indicator (RSSI) circuitry 112, which in turn is coupled to a controller 114 for maintaining overall communication unit control. The controller 114 is also coupled to the receiver front-end circuitry 106 and the signal processing function 108

10   (generally realised by a DSP). The controller is also coupled to a memory element 116 that, according to the preferred embodiment of the present invention comprises a logical structure for storing registration data pertaining to the communication unit's hardware and

15   software configuration. The memory element 116 also stores operating regimes, such as decoding/encoding functions and the like and further firmware for supporting functional features of the device. A timer 118 is typically coupled to the controller 114 to control

20   the timing of operations (transmission or reception of time-dependent signals) within the wireless information device 100.

As regards the transmit chain, this essentially includes

25   an input device 120, such as a microphone and keypad, coupled in series through transmitter/modulation circuitry 122 and a power amplifier 124 to the antenna 102. The transmitter/ modulation circuitry 122 and the power amplifier 124 are operationally responsive to the

30   controller.

In accordance with the preferred embodiment of the present invention, the signal processing function 108,

has been adapted to support the functionality provided by a Java Virtual Machine (JVM) 109 capable of supporting wireless messaging. The implementation of a JVM 109 on the signal processing function 108 allows application

5 software not written specifically for the wireless information device 100 in question to be executed on the wireless information device 100. For example, a generic class of such communications units 100, each having a different hardware realisation of the signal processing

10 function 108 (e.g. the units may use different families or types of DSPs or microprocessors to implement the processing function 108), may have application software written for that class.

15 The Java language includes a number of safety features that prevent unrestricted access to the memory element 116 and processing function 108, of the host communication/ information unit 100. These safety features are a key feature of the language and prevent

20 the JVM 109 from directly accessing and executing some or all functions native to the device 100, i.e. functions not running under the direct control of the JVM 109. The Java language requires specific authorisation to be granted before such actions can be taken.

25

Referring now to FIG.2, a schematic representation of an application registration system is illustrated in accordance with a preferred embodiment of the present invention.

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In a preferred embodiment of the present invention, a method for registering an application program for use on a mobile wireless information device 100 is described.

The application program is preferably downloadable to the mobile wireless information device 100 via a suitable interface.   In accordance with the preferred embodiment of the present invention, the application program has the

5   ability to register itself with a remote registration server 207 by running a self registration function. Furthermore, the application program is able to access data associated with, and stored on, the mobile wireless information device 100.   The application program

10   preferably utilises a wireless communications mechanism and communications protocol provided by the mobile wireless information device 100, and transmits registration data via the wireless communication mechanism to a remote registration server 207.

15

The registration process performed in this manner requires minimal intervention on the part of the user. The registration process also supplies enough detailed information for the application software or firmware

20   provider to track the use of the firmware or software application.

In a further preferred and advantageous embodiment of the present invention, the application program that is being

25   executed on the signal processing function 108 issues a command requesting transmission of a message via the wireless communications mechanism and communications protocol of the mobile wireless information device 100.

30   Furthermore, upon successful registration the application program writes registration data to a registration memory element 116 associated with the device 100.   In this manner the application does not require an external

registration authorisation source and can simply confirm
its own registration by writing identifier information to
a suitable location on the wireless information device
100, such as the local record management system (RMS).

5

In a further advantageous embodiment of the present
invention, the application program uses the SMS wireless
communications protocol and sends a text message to a
pre-defined registration server 207. The SMS text
10   contains various data associated with the device 100, but
preferably the telephone number of the device 100. This
allows the user of the application program to be
identified and registered correctly. The SMS text
message also preferably contains the ID code of a
15   registration server 207, the registration server itself
being registered under this code with at least one SMSC
(SMS centre) 203. Thus the application program is able
to access its own dedicated registration server 207.

20   In a yet further advantageous embodiment of the present
invention the application program is a Java MIDlet
(Mobile Information Device Profile) conform program. The
Java MIDlet profile preferably defines functionality that
is specifically for use with mobile information devices
25   100, thereby ensuring that access to the required
wireless functionality such as wireless messaging is
available to the application program.

In a further advantageous aspect of the present
30   invention, the Java MIDlet application program may be
downloaded to the mobile information device 100 via any
of a variety of transmission methods, for example a
wireless communications interface such as BlueTooth(™),

or the Global System for Mobile communications system
(GSM) or a General Packet Radio System (GPRS) or a
Universal Mobile Telecommunication System (UMTS) or via
an infra-red communication link, or a wireline (such as a
5   universal serial bus (USB) or RS232) or optical fibre
interface. It is also envisaged that the Java MIDlet
application program may be downloaded to the mobile
information device 100 via a memory card such as a
multimedia card (MMC) or a secure digital (SD) card.
10

In order to validly register the application program
according to the present invention, the application
program will not execute if a registration phase is not
performed and validated. For example, the Java MIDlet
15   application will not be 'enabled' if authorisation for
transmitting a short message service (SMS) message is
denied or if the self registration process is ended
prematurely. At this point the application may quit and
disable itself, it may attempt to re-register at the next
20   execution of the code, or it may continue to request the
transmission of the SMS.

In a yet further advantageous embodiment of the
application the registration server 207 stores the
25   application registration data and the wireless mobile
information device's telephone number, which are
contained in the SMS text message, in a local
registration database 208. Further, upon successfully
sending the SMS registration text message, the
30   application confirms its registration by writing pre-
defined registration data to the appropriate location in
the wireless information device's memory element 116,
e.g. its record management system (RMS).

In a yet further advantageous embodiment, upon execution
the Java MIDlet application first searches for
registration data in the memory element 116 of the device

5   100 for example in the Record Management System (RMS).
The Java MIDlet application subsequently executes
correctly if registration data is held in the RMS, and
therefore does not perform a further registration
attempt.

10

The invention can be better understood by reference to
the following description of a preferred embodiment, as
illustrated in FIG's 2 and 3.

15 A registration server 207 adapted for implementing the
present invention, is itself in a further advantageous
embodiment registered with a SMS Centre (SMSC) 203 for
the purposes of receiving application registration data
via SMS text messages 202. The registration server 207

20 is linked to the SMSC via a communication interface 206,
which may be a wireless interface but is preferably a
terrestrial WAN or internet connection and a
communication link 209. The registration server 207 has
access to a local server-side database 208 via a local

25 communications link 209 which may be a wide area/access
network (WAN) or local area/access network (LAN)
connection or some other local communications system.

The SMS text message 202 is sent from the mobile wireless

30 device 100 to a SMSC 203. The particular SMSC 203 that
the message is sent to will depend on the user's network
provider, e.g. Orange, Vodafone etc. The SMSC 203
receives the SMS text message 202 from the sender and

forwards it to the desired recipient, i.e. the registration server 207. To achieve this, the registration server 207 is preferably registered with the SMSC 203 to use a particular ID number.

When a message is received by the SMSC 203 with a recipient's number that matches one of the pre-registered numbers, the SMSC 203 will forward the message data to the registered location 207. The registration server 207 is preferably registered with the SMSC's owner, typically a network operator. The Java MIDlet application developer's server 207 is associated with a set number, which is set as the registration server number in the Java MIDlet, and will be used by the SMSC 203 to locate the registration server 207 and deliver the registration text.

In detail, the mobile information device 100 communicates a SMS text message to the SMSC 203 which parses the message and extracts the ID number of the registration server 207. The SMSC 203 then forwards the message to the registration server 207, which receives the SMS text message data and retrieves the application ID from the message body and sender's mobile phone number from the message header. This information is then stored in a new record in a server side database 208 for later access/use, say, by the application developer.

In a further advantageous embodiment of the present invention, the registration server 207 may transmit a SMS text message to a registered mobile wireless information device 100. ~~It is envisaged that the SMS text message may hold program code for modifying e.g. unlocking,~~

~~upgrading, terminating the behaviour of the registered~~
~~application program(s) stored on the device 100 and~~
~~registered with the registration server 207.~~ The SMS
text may also include information for the user of the
5   mobile device 100 regarding some aspect or feature of the
registered application.

Referring now to FIG. 3, a flow chart illustrates a
preferred registration process of the specific case of a
10   Java MIDlet (MID profile) application. To simplify the
flow chart, the steps involved in downloading the MIDlet
to the communications device 100 are not shown, i.e. it
is assumed that at step 305 the MIDlet is residing in the
memory element 116 of the communications device 100.
15

The process begins with the execution of the Java MIDlet
at step 305. The MIDlet application must allow the
Application Management Software (AMS) to control it, i.e.
to create, start, pause and/or destroy the MIDlet. Thus,
20   at step 305 the Java MIDlet execution may be user driven,
or may be event driven via the AMS.

Once the Java MIDlet is executed in step 305, the Java
MIDlet checks the device's Record Management Store (RMS)
25   for registration data, as shown in step 310. The RMS is
preferably a device specific storage area in the
communication unit's memory element 116. The RMS is
preferably maintained by the wireless information device
100 across multiple invocations of the Java MIDlet,
30   thereby allowing pre-stored registration data to be
retrieved by the Java MIDlet application.

The wireless information device 100 is responsible for ensuring the retention of the RMS during events such as power-down or battery changes. After the Java MIDlet has checked the RMS, a determination is made as to whether

5 the Java MIDlet is already registered, in step 315. In effect, the Java MIDlet application decides whether to allow itself to be run in step 320 or to proceed with the registration process. Assuming that the appropriate registration data is not stored in the communication

10 unit's RMS, in step 315, the Java MIDlet then preferably calls a standard Wireless Messaging API method such as Connector.open("sms://",write) which initiates the SMS text transmission process.

15 The attempt to transmit a SMS text invokes the security system of the Wireless API, which forces the application to notify the user of the attempt. The application must therefore request a SMS text to be transmitted from the communications unit to the short message service centre

20 (SMSC), which forwards the text to the Registration Server identified by the contents of the text, as shown in step 325.

Advantageously, the SMS text transmission is either
25 allowed or forbidden by the user in step 330. If the transmission is forbidden by the user in step 330, then the request is repeated and a suitable text message displayed on the communication unit's display, in step 335. For example, a user may be informed that the Java

30 MIDlet application must first be registered before it may be run. Alternatively, it is envisaged that the application may simply quit. ~~In a yet further~~
~~alternative embodiment, the Java MIDlet application may~~

~~be allowed to start anyway, such that the registration~~
~~process is, in effect, a voluntary process.~~

If the transmission of the SMS text is allowed by the
5   user in step 330, the SMS text sent by the communication
unit and the wireless SMS message is transmitted to the
remote server (SMSC), as shown in step 340. Notably, the
SMS text transmission comprises the application ID and/or
the user's mobile phone number. The Java MIDlet
10   Application is then able to write the registration data,
which is preferably pre-stored in the application, to the
device RMS and proceed to run the application, as shown
in step 345. In this manner, the Java MIDlet application
initiates itself to allow a user to run the application,
15   once the user has authorised a wireless transmission of a
registration message, using for example an SMS message.
After the Java MIDlet application has been registered a
first time, it is envisaged that the user will not have
to register again.
20

~~Although the preferred embodiment of the present~~
~~invention is described with respect to the processor in~~
~~the wireless information device activating the~~
~~application program upon transmission of registration~~
25   ~~data, it is within the contemplation of the invention~~
~~that, in some instances, the application program may be~~
~~activated later upon receipt of an acknowledgment of~~
~~successful registration, say from the registration server~~
~~by means of a SMS text message.~~
30

It will be understood that the mobile information device
as described above, aims to provide at least one or more
of the following advantages:

(i) A method of registering an application downloaded onto a mobile communications device, so that the application may be executed. This allows the
5   application developer to monitor use of their software, allows the mobile device's user to be informed of modifications and/or updates to the functionality of the device and/or allows automatic optimisation of features of the device.
10

(ii) A method of recording the registration of an application by writing registration data to, say, an RMS of the mobile device, thus allowing an automatic check for pre-registration.
15

(iii) A server capable of receiving the contents of an SMS text message, decoding its contents and subsequently storing the user's registration data contained in the SMS text in a record in a server-side
20   database 208.

(iv) A reliable and simple method of accurately identifying and registering an ID number of a mobile information device by using an SMS text message service
25   for contacting the registration server. The SMS text message preferably contains the telephone number of the mobile information device to allow the user to be identified and/or contacted.

30   (v) A method for activating a Java MIDlet application designed to run on a mobile information device supporting a JVM.

Whilst the specific and preferred implementations of the embodiments of the present invention are described above, it is clear that one skilled in the art could readily apply variations and modifications of such inventive
5 concepts.

Thus, a wireless information device with signal processing function capable of executing software applications has been described where the aforementioned
10 disadvantages associated with prior art arrangements have been substantially alleviated.

Claims

1.   A method for registering an application program (300) for use on a wireless~~a~~ information device (100), the application program being downloadable to the wireless information device (100) via a communications interface, wherein the method comprises the step of:
        accessing data (310) associated with, and stored on, the wireless information device (100) by the application program;
wherein the method is characterised by the steps of:
        running a self-registration function; and
        transmitting registration data (340) wirelessly to a remote registration server (207) to register the application program; and
        activating the application program (345) in response to transmitting registration data (340).

2.   ~~A method for registering an application program (300) according to Claim 1 further characterised by the step of:~~
        ~~activating the application program (345) following transmission of the registration data (340).~~

~~3.~~   A method for registering an application program (300) according to Claim 1 further characterised by the step of:
        authorising, by a user of the wireless information device (100), the ~~a~~ wireless transmission of registration data in order to activate the application program (345).

4̶3. A method for registering an application program
(300) according to Claim 3̶—2 when authorising
t̶r̶a̶n̶s̶m̶i̶s̶s̶i̶o̶n̶ is not a̶u̶t̶h̶o̶r̶i̶s̶e̶dperformed, wherein the
method is further characterised by any of the following

5   steps:

quitting or disabling the application program,
attempting to re-register at a subsequent
execution of the application program, or
continuing to request a transmission of the

10   registration data.

5̶4. A method for registering an application program
(300) according to Claim 1 further characterised by the
step of:

15   writing registration data to a registration
memory associated with the device, following transmission
. of the registration data.

6̶5. A method for registering an application program
20   (300) according to Claim 1 wherein the step of accessing
data comprises the step of searching for registration
data in a memory element of the wireless information
device (100) following execution of the application
program in order to determine whether to perform the step

25   of transmitting registration data.

7̶6. A method for registering an application program
(300) according to Claim 1 further characterised in that
the registration data is transmitted using a wireless

30   communications protocol,̶ ̶f̶o̶r̶ ̶e̶x̶a̶m̶p̶l̶e̶ ̶t̶h̶e̶ ̶G̶S̶M̶ ̶S̶h̶o̶r̶t̶
M̶e̶s̶s̶a̶g̶i̶n̶g̶ ̶S̶e̶r̶v̶i̶c̶e̶ ̶p̶r̶o̶t̶o̶c̶o̶l̶.

8̶7.   A method for registering an application program
(300) according to Claim 1 further characterised in that
the application program is written in Java™ language.

5   9̶8.   A method for registering an application program
(300) according to Claim 1 further characterised in that
the application program is a Java™ MIDlet conform
program.

10   1̶0̶9.   A method for registering an application program
(300) according to Claim 1 further characterised in that
the step of transmitting registration data (340)
comprises transmitting an application program identifier
and/or a wireless information device identifier.

15

1̶1̶10.   A method for registering an application program
(300) according to Claim 1̶0̶—9 further characterised in
that the step of transmitting registration data (340)
comprises transmitting an identifier of a registration
20   server.

1̶2̶11.   A method for registering an application program
(300) according to Claim 1̶0̶—9 further characterised by
the step of:
25   storing, by a registration server (207), the
application program registration data, the application
program identifier and/or a wireless information device
identifier in a registration data-base (208).

30   1̶3̶12.   A method for registering an application program
(300) according to Claim 1̶0̶—9 further characterised by
the step of:

tracking a use and/or a user of the application program using the application program identifier and/or a wireless information device identifier.

5   ~~14~~13.   A method for registering and activating a Java MIDLet application program stored on a mobile wireless information device (300) comprising, upon execution of the MIDlet, the following steps:

        (i) Searching for registration data in ~~the~~ a
10   Record Management System (RMS) of the device (310);

        (ii) Allowing the program to execute if said registration data is held in the RMS (320);

        (iii) Requesting to send an SMS text message if said registration data is not in the RMS (325);

15   (iv) Quitting the application or repeating the request if said request is denied;

        (v) Sending a SMS text message to a remote registration server (340), ~~the telephone number or contact code of the registration server being available~~
20   ~~to the MIDlet,~~ said message containing an ID code associated with the application and ~~the~~ a telephone number of the mobile wireless device, if said request is allowed; and

        (vi) ~~Storing a record of the registration into~~
25   ~~the RMS of the device; and~~

        ~~(vii)~~ Allowing the application to run (345).

        ~~15.   A registration server (207) for use in implementing the method steps of Claim 1 characterised in~~
30   ~~that the registration server (207) is registered with a SMSC (203) for the purposes of receiving application registration data via a SMS text message, said server (207) being capable of interpreting the data stored in~~

~~the text message and storing said data in a server side
registration database (208).~~

~~16.   A registration server (207) according to Claim~~
5 ~~15, further characterised in that the registration server
(207) comprises a processor for receiving, interpreting
and storing application program registration data, an
application program identifier and/or a wireless
information device identifier in a registration database~~
10 ~~(208).~~

~~17.   A registration server (207) for use in
implementing the method steps of Claim 14 characterised
in that the registration server (207) is registered with~~
15 ~~a SMSC (203) for the purposes of receiving application
registration data via a SMS text message, said server
(207) being capable of interpreting the data stored in
the text message and storing said data in a server side
registration database (208).~~
20

~~18.   A registration server (207) according to Claim
17, further characterised in that the registration server
(207) comprises a processor for receiving, interpreting
and storing application program registration data, an~~
25 ~~application program identifier and/or a wireless
information device identifier in a registration database
(208).~~

19~~1~~4.   A wireless information device (100) comprising:
30   a processing function (108) capable of supporting
a Java Virtual Machine (109), wherein the Java Virtual
Machine supports wireless messaging services and MIDlets;

a memory element (116) operably coupled to the processing function (108) comprising a Java application program; and

a wireless communication mechanism operationally

5   responsive to the processing function (108);

wherein the wireless information device (100) is characterised by:

the processing function (108) running a self-

10   registration function a wireless communication mechanism operationally responsive to the processing function (108) such that registration data is transmitted to a remote server and the Java application program is activated in response to transmitting the registration data, for

15   example using short message service text messages in order to activate the application program.

15.   A wireless information device (100) according to Claim 14, further characterised in that registration data

20   is transmitted to a remote server using short message service text messages.

2016.   A wireless information device (100) according to

25   Claim 1914, further characterised by the memory element comprising an application program identifier and/or a wireless information device identifier to transmit to the remote server.

30   21.   A wireless information device (100) according to Claim 19 further characterised by the processing function (108) activating the application program following transmission of the registration data.

2217.   A wireless information device (100) according to
Claim 19 14 further characterised by the processing
function (108) writing registration data to memory
5   element (116) following transmission of the registration
data.

2318.   A wireless information device (100) according to
Claim 19 14 further characterised in that the wireless
10   information device (100) is a mobile telephone (100, 201)
or a PDA or a laptop or mobile computer.